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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,991	02/23/2006	Atsushi Takahashi	10114961	3219
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EXAMINER				
MAL, HAO'D				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,991

Applicant(s)

TAKAHASHI, ATSUSHI

Examiner

HAO D. MAI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification does not have support for the following claimed limitations: "undulated latch plate" (claim 1) and "the core is filled with a water-retaining sponge immersed in a water soluble agent" (claim 8). No new matter should be entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "undulated latch plate" (claim 1) and "the core is filled with a water-retaining sponge" (claim 8) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant

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will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 4-6 are objected to because of the following informalities:
- Claim 4 is incomplete. The claim should be corrected to include "is disposed in the hollow portion of the core" at the end of the claim.
 - Claims 5-6 each recites "The prophy chip as claimed in any one of claim 1". The claims should be corrected to delete "any one of".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1 recites the limitations "the rotation axis" (line 6 of claim 1) and "the interior" (line 10 of claim 6), which lack sufficient antecedent bases.
- Claim 6 recites the limitation "the sponge" (line 2 of claim 6), which lacks sufficient antecedent basis.
- Claim 7 recites the limitation "the hollow portion" (line 2 of claim 7), which lacks sufficient antecedent basis.
- Claim 8 recites the limitation "the surface" (line 3 of claim 6), which lacks sufficient antecedent basis.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-5, and 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman (2789352), in view of Van Leuwen et al. (4008189), and further in view of Furuzono et al. (EP 1508586 A1).**

In reference to claims 1-2:

Wiseman discloses a prophy chip, mounted on top of a dental rotary instrument comprising: a hollow cup-shaped core 18 with cupped profile; a shaft/shank 6 containing a connecting means (column 2 lines 15-21) capable of connecting the prophy chip to the dental rotary instrument and is capable of avoiding vibration around the rotation axis of the core for during rotation; a soft rubber base 5 covering core 18; and an undulated latch plate 3/4/5 capable of fixing the rubber base 5 to shank 6 (Figs. 1-3; column 2 lines 10-21). The undulation is created by the socket 3 and/or bulbous end 5. Note that the process "by folding the edge [of the base] into the interior of the core" does not convey patentable in a structural apparatus claim; if the prior art structure is capable of such process, then it meet the claim. In this case, the soft rubber base 5 is capable of being folded into the interior of the core 18. Furthermore, the rubber base 5 is also capable of being immersed in water prior to operation.

As stated, Wiseman discloses a soft rubber base 5 covering core 18; thus failing to disclose the claimed hydrophilic grindstone sponge containing comprises a grindstone therein covering the core. Van Leuwen et al. disclose a hydrophilic polyurethane sponge/foam that is

useful in cleaning applications (abstract; column 1 lines 14-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wiseman by substituting Wiseman's soft rubber base with Van Leuwen's hydrophilic polyurethane sponge so that such sponge can absorb water in order to dissipate heat generated by friction. The hydrophilic polyurethane sponge/foam as disclosed by Van Leuwen is capable of being folded into the interior of Wise's core 18.

Wise/Van Leuwen disclose the invention substantially as claimed except for the hydrophilic polyurethane sponge comprises a grindstone therein (claim 1), particularly a grindstone of $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ (claim 2). It is well known in the art of polishing and cleaning that grindstones and/or abrasive grains are embedded into rubber base sponge to clean and polish surfaces. Additionally, Furuzono et al. disclose a polyurethane-base material containing grindstone $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ (paragraphs 16 and 39). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wiseman/Van Leuwen by embedding a grindstone, specifically a grindstone of $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ as taught by Furuzono, into the hydrophilic polyurethane sponge in order to provide the sponge an abrasive surface that effectively cleans and polishes surfaces of the teeth.

In reference to claims 3-4:

Wiseman/Van Leuwen/Furuzono disclose the invention substantially according to claims 1 or 2. As to claim 3, Wiseman/Van Leuwen/Furuzono however are silent to the hydrophilic sponge comprises at least one water soluble agent consisting of a foaming agent, a sweetener, a fragrance, a medicament for inhibiting or preventing periodontal diseases or dental caries, or a coating agent.

As to claim 4, Wiseman's core 18 is disclosed to be porous, i.e. permeable by water, air, etc., at ridges 21 (Fig. 1). Wiseman teaches a polishing material 19 is disposed in the hollow

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interior of core 19, and is allowed to permeate through the outside of the core via ridges 21 (column 3 lines 9-23). However, Wiseman/Van Leuwen/Furuzono are silent to specifically a water soluble agent consisting of a foaming agent, a sweetener, a fragrance, or a medicament for inhibiting or preventing periodontal diseases or dental caries, being disposed in the hollow portion of the core.

It is well known in the field of dentistry and dental hygiene to use of a water soluble agent consisting of a foaming agent, a sweetener, a fragrance, a medicament for inhibiting or preventing periodontal diseases or dental caries, or a coating agent, along with such prophylactic chip disclosed by Wiseman/Van Leuwen/Furuzono during teeth cleaning and/or polishing in order to effectively clean and/or polish the teeth. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wiseman/Van Leuwen/Furuzono by substituting Wiseman's tooth polishing material with the claimed water soluble agent, so that it can be released by the core and dispensed or comprised within the hydrophilic grindstone sponge, in order to effectively clean and/or polish the teeth.

In reference to claim 5:

The outside of Wiseman's core 18 is generally nonwoven, i.e. not weaved or of weaved fibers. The core 18 is capable maintaining the rubber base or the hydrophilic grindstone sponge. The ridges 21 as disclosed by Wiseman also form a portion of the outside of core 18; ridges 21 are nonwoven and have flexibility and hydrophilicity, i.e. readily absorbing water.

In reference to claim 7:

Wiseman's core 18 is shown to contain a coating agent of tooth polishing material 19 (Fig. 3). Such tooth polish material 19 is capable of coating the teeth.

8. **Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman (2789352) in view of Van Leuwen et al. (4008189), further in view of Furuzono et al. (EP 1508586 A1), and further in view of Kliger (3911922).**

Wiseman/Van Leuwen/Furuzono disclose the invention substantially according to claim

1. However, Wiseman/Van Leuwen/Furuzono fail to disclose an outside of the sponge covering the core is a three-dimensionally continuous, porous film.

Kliger discloses a gauze having outer layers/films 6 and 8 that are of polyurethane, three-dimensionally continuous, and porous (abstract; column 1 lines 49-62; column 3 lines 36-38). Such surgical gauze along with the outer layers/films is capable conducting a solution from a flexible polishing agent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wiseman/Van Leuwen/Furuzono by including a film that is three-dimensionally continuous and porous to the hydrophilic grindstone sponge so that water and/or other types of liquids can be absorbed and released easily.

9. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman (2789352) in view of Van Leuwen et al. (4008189), further in view of Furuzono et al. (EP 1508586 A1), and further in view of Denmark (4831676).**

Wiseman/Van Leuwen/Furuzono disclose the invention substantially according to claim

1. However, Wiseman/Van Leuwen/Furuzono fail to disclose the core is filled with water-retaining sponge immersed in a water soluble agent.

Denmark discloses a dental cleaning device comprises a hollow rough-surfaced cover 18 being filled with a sponge 10, which is capable of retaining water and being immersed in a water soluble agent. It would have been obvious to one having ordinary skill in the art at the

time the invention was made to fill Wiseman/Van Leuwen/Furuzono's core with a water-retaining sponge as taught by Denmark so that the sponge can slowly release the retained water or water soluble agent. The water soluble agent, in which the sponge is immersed, is capable of being released from the surface of the hydrophilic grindstone sponge covering the core.

Response to Arguments

10. Applicant's arguments filed 3/27/2008 have been fully considered and are unpersuasive and/or moot in view of new ground(s) of the rejection.

Applicant's arguments regarding Wiseman not disclosing an undulated latch plate are moot in view of new ground(s) of rejection necessitated by amendment. Note that the previous rejection stated that Wiseman discloses the shank equipped latch plate 4, which was previously claimed before the newly made amendment(s). Now with the newly made amendment claiming an undulated latch plate, note that Wiseman discloses latch plate 3/4/5 being undulated as detailed in the above rejection.

Regarding applicant's arguments that Leuwen's hydrophilic polyurethane sponge cannot be folded into the interior of the core 18 of Wiseman, the examiner disagrees. Leuwen's hydrophilic polyurethane sponge/foam, such as that used in cleaning, is capable of being folded into the interior of Wiseman's core's 18. The examiner does not see why such sponge/foam cannot be folded as argued by the applicant.

Regarding applicant's arguments that neither Wiseman nor Kliger discloses a reticular or porous core, note that Kliger was not used to reject the claimed reticular or porous core. As detailed in the above rejection, Wiseman's core 18 is disclosed to be porous, i.e. permeable by water, air, etc., at ridges 21 (Fig. 1). Wiseman teaches that a polishing material 19 is disposed in the hollow interior of core 18; and the polishing material 19 is capable of permeate through the outside of the core via ridges 21 (column 3 lines 9-23).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO D. MAI whose telephone number is (571)270-3002. The examiner can normally be reached on Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Hao D Mai/
Examiner, Art Unit 3732**

**/John J Wilson/
Primary Examiner, Art Unit 3732**